

CONTAINS CONFIDENTIAL INFORMATION SUBJECT TO PROTECTIVE ORDER

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

AMPEX CORPORATION,

Plaintiff,

v.

EASTMAN KODAK COMPANY,  
ALTEK CORPORATION and CHINON  
INDUSTRIES, INC.,

Defendants.

C.A. No. 04-1373-KAJ

REDACTED

**DECLARATION OF JAMES STORER IN SUPPORT OF DEFENDANTS' MOTION  
FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT**

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I, James Storer, do hereby depose and swear as follows:

1. I submit this declaration in support of Defendants' Motion for Summary Judgment of Non-Infringement. I have been retained as an expert in this litigation by counsel for Defendants, Eastman Kodak Company ("Kodak") and Altek Corporation ("Altek").

2. My background and qualifications are recited in my Declaration Submitted in Support of Defendants' Opening Claim Construction Brief ("Claim Construction Declaration") which I understand is being filed at the same time as this declaration.

3. For the purposes of this declaration, my opinions and recitation of facts are based on my review of the '121 patent, the asserted claims, the file history of the '121 patent, the references cited during prosecution, dictionary definitions, and my knowledge of the relevant art as defined below. I have also reviewed technical documents produced by Kodak and Altek in this litigation and in the ITC investigation, and numerous transcripts of depositions taken by the parties in this case, as well as ITC trial testimony in written form. I reviewed the expert reports submitted on behalf of Ampex, the plaintiff in this matter, and Ampex discovery responses. I have inspected a number of the accused cameras and spoken to numerous Kodak engineers about the accused cameras. Unless otherwise noted, the demonstrative illustrations in this Declaration were also presented to the Court as part of the Defendants' Technology Tutorial on January 12, 2006.

**OVERVIEW OF THE TECHNOLOGY OF THE '121 PATENT**

4. A person of ordinary skill in the art (as explained in my Claim Construction Declaration) reading the '121 patent would be able to discern the following:

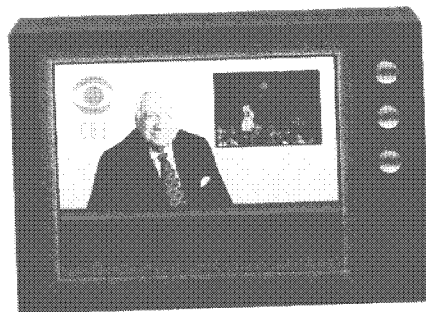
5. The '121 patent is directed "to a digital electronic still store for *broadcast television signals* . . . ." ('121 patent, 1:11-14). At the time of the claimed invention, "electronic still stores" were devices used in the television industry to capture a single "frame" (i.e., a still

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image) of video (typically broadcast at 30 frames per second) received from an analog television signal. The electronic still store then could digitize the captured still image (to the extent that it was not already digitized) and store the resulting data in temporary random access memory (RAM) called a "frame store" or more permanently on "bulk" or "disk store." ('121 patent, 1:15-17.)

6. The specification repeatedly confirms that the '121 patent is limited to the broadcast television context. ('121 patent, 1:17-21 (referring to use of the claimed invention "to generate a continuously displayed television image"); '121 patent, 1:43 (referring to "real time [television] broadcast"); '121 patent, 2:48-51 (discussing benefits of invention "during a television broadcast"); '121 patent, 3:55-58 (describing storage of "video" generated pursuant to "NTSC" television standard); '121 patent, 4:34-36 (using an output processor "for forming a television signal in a standard format"); '121 patent, 4:41-44 (detailing the "normal" mode of the invention as "output[ting] a continuous television image in digital data form").

7. At some later point in time, the stored "data defining the image" may be accessed and then "repetitively read out to generate a continuously displayed television image." ('121 patent, 4:41-44.) After output from the system, the full size image could be resized and inserted in the "corner of a live studio image depicting a newscaster describing a news event" ('121 patent, 1:23-26). Following is a demonstrative example.



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8. According to the '121 patent specification, the image reduction process used by prior art systems presented problems:

[E]ach of the several images which are to be simultaneously displayed must first be read from the disk store as full size images and then reduced for insertion into the multi-image display. This process takes  $\frac{1}{4}$  to  $\frac{1}{2}$  seconds for each image and results in a delay of several seconds for the composite multi-image display. Such a time delay is at best disconcerting for a busy editor and precludes use of the editing features of the system during a real time broadcast.

('121 patent, 1:34-43.)

9. The inventor of the '121 patent claimed to have solved this "delay" problem through the use of a "frame store" operable in two modes: (i) a first mode in which the "frame store" saves "full size" images to, and retrieves the same "full size" image from, disk storage, and uses that image data to "repetitively generate a full spatial resolution output image frame;" and (ii) a second mode in which the "frame store" saves "reduced spatial resolution image frames" to, and retrieves the same reduced images from, disk storage "to repetitively generate an output image frame [of the] reduced spatial resolution image frames...." ('121 patent, 2:1-16.)

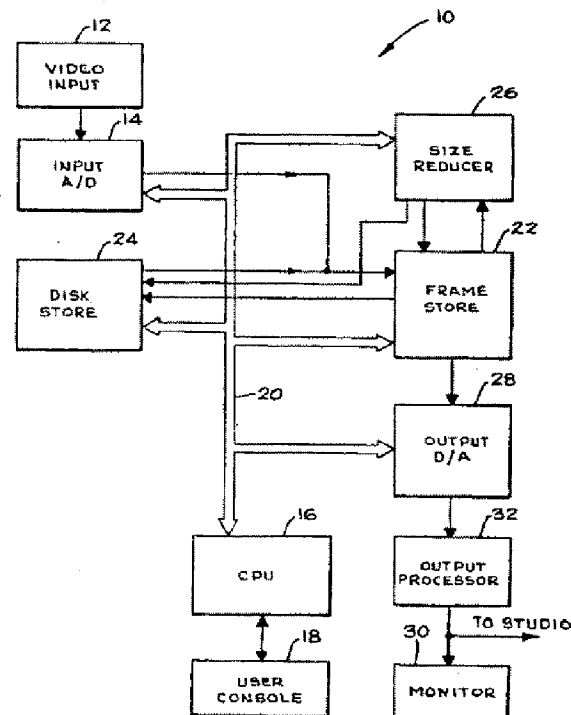
10. The claimed system utilizes "an image size reducer" that produces the reduced size images. ('121 patent, 2:17-28.)

11. The specification of '121 patent states that "[b]ecause the images [in the second mode] are read from the image store in reduced size and spatial resolution," the time to output the reduced image is drastically reduced. ('121 patent, 2:32-43.) According to the inventor, this "rapid response rate of the system" allowed "busy editors" to overcome the "delay" problem supposedly present in the prior art by allowing for "outputting of data frames containing multiple reduced size images on demand during a television broadcast." ('121 patent, 2:44-51.)

12. The '121 patent discloses just one embodiment that is depicted in a single figure ("a block diagram representation of an electronic still store system in accordance with the

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invention”) shown below:



(‘121 patent, 2:54-59.) In operation, system 10 includes a “video input circuit 12,” which “may be another electronic still store system, a TV camera, or some other source of video data from which one or more frames of a video image may be captured.” (‘121 patent, 2:65-3:1). The patent makes clear that “the video input 12 will include appropriate video signal decoding means to process video data received from sources that provide the data in encoded form.” (‘121 patent, 3:8-11.) In other words, any processing of the captured television image data is performed outside the claimed invention (e.g., by the television camera) or exclusively by video input circuit 12.

13. Television frame data captured by video input circuit 12 is converted to a digital signal by analog-to-digital (A/D) converter 14. A person of ordinary skill in the art would recognize that the form of video signal described in the specification references a video signal designed in accordance with well-known television standards, such as NTSC.

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14. A/D converter 14 sends the digitized “video data representing a frame of video image” to frame store 22, which is comprised of a “random access memory.” (‘121 patent, 3:44-49.) Image data from broadcast television “video” typically has a resolution of either 720x480 pixels (for NTSC) or 720x570 pixels (for PAL).

15. Frame store 22 may send the digitized video data to size reducer 26, which may “convert the video data to a quarter spatial resolution copy.” (‘121 patent, 4:1-7.) Size reducer 26 subsequently transfers the quarter spatial resolution copy to either the framestore 22 or disk store 24. (‘121 patent, 4:9-12.) Both the full and reduced spatial resolution copy are sent from frame store 22 to disk store “for more permanent storage.” (‘121 patent, 4:16-27.)

16. When used in “first mode,” the “normal” television “broadcast mode, frame store 22 receives a full resolution frame of video data from disk store 24 and outputs a continuous television image in digital data form in response thereto.” (‘121 patent, 4:41-44.) To do so, frame store 22 repeatedly outputs video data retrieved from disk store 24 to output digital-to-analog converter 28, which receives the “digital output data and converts it to an analog video signal....” (‘121 patent, 4:28-34.) Output processor 32 (“a conventional video signal output processor”) then “form[s] a television signal in a standard format” which can be viewed on monitor 30 or “communicated to studio equipment for further use, broadcasting, or storage.” (‘121 patent, 4:34-40.)

17. Consistent with the inventor’s stated intent to avoid the retrieval “delays” found in the prior art, the patent claims two different ways to speed up the transfer of video pixel data between disk store 24 and frame store 22. First, claims 7, 8, and 10 seek to preclude unnecessary delays inherent in circuitry processing by requiring that the transfer of image data between those two components be “direct” – i.e., “with no other circuit therebetween.” (See ‘121 Prosecution History, at A145-46). Second, claims 8 and 14 require frame store 22 to contain separate input

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and output ports; this requirement ensures that frame store 22 will have the capability of rapidly receiving multiple captured image data from input analog-to-digital converter 14, disk store 24, and/or size reducer 26, while at the same time rapidly sending captured image data to disk store 24, image reducer 26, and/or output digital-to-analog converter 28. (See '121 patent, claims 8 and 14).

18. Central processing unit (CPU) 16 is a Z80 microprocessor that "is connected to receive operator commands from a user console 18. ('121 patent, 3:34-37.) Via system bus 20, CPU 16 controls various components of system 10, including frame store 22 ('121 patent, 3:44-46), size reducer 26 ('121 patent, 4:1-2), and disk store 24 ('121 patent, 4:45-50). The '121 patent does not describe the transfer of image data to CPU 16.

19. The goal of the system described in the '121 patent was to receive digitized data corresponding to a captured video frame, and to store the exact same data to permanent storage such that the image could be rapidly retrieved and output for display appearing exactly like the original captured frame of video.

20. Each asserted claim of the '121 patent requires "video" pixel data to be stored in RAM and in bulk storage. Further, each claim requires a system that (among other things): (i) receives and stores video image "data" corresponding to a "full size image;" (ii) uses that *same* "data" (i.e., the "said data") to generate a "reduced size image;" and (iii) saves that *same* "data" (i.e., the "said data") to storage for later retrieval.

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**THE ACCUSED CAMERAS – CLASSIFICATION**

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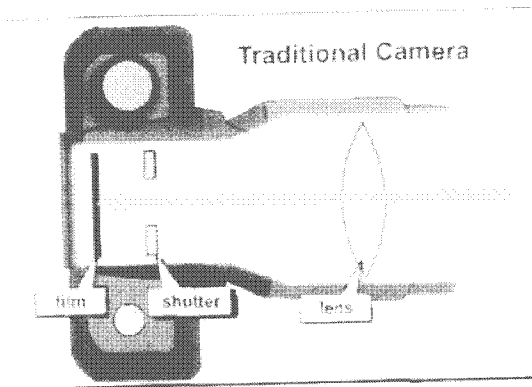
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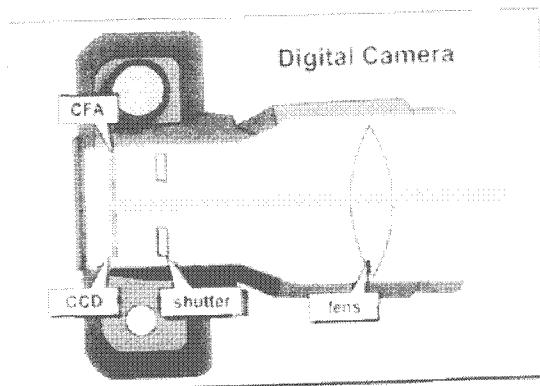
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THE ACCUSED CAMERAS – OPERATION

23. As shown in the demonstrative illustration below, in conventional film cameras, when the shutter button is pressed, the shutter opens and the incoming light is focused on light-sensitive film inside the camera. The film then is processed chemically and printed on photographic paper.



24. In contrast, when the user of any accused digital camera operating in "still" capture mode presses the shutter button, the shutter opens and the incoming light is focused on an image sensor called a charge-coupled device (CCD) sensor. The process is depicted in the demonstrative illustration below.



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25. Whereas in film cameras the exposed film must be taken from the camera, developed and then used to create prints before the captured scene may be viewed, the accused digital cameras “process” the picture in the cameras themselves and display them on an LCD. In addition, the cameras save a digital file containing image data that has been compressed according to the JPEG image compression standard in the camera’s internal memory or on a removal memory card (e.g., an SD/MMC card). JPEG compression, as discussed in more detail below, uses complex mathematical algorithms that result in the loss of image data in order to save file space.

26. In addition to allowing for “still” image capture, the accused digital cameras have a “Video” mode in which the user can record a movie that will be saved as an “MPEG” file.

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**REDACTED**

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29. None of the accused Kodak cameras can accept or capture image data from an electronic still store system as described in the '121 patent, or a TV camera, or some other outside source of video data.

**REDACTED**

**CERTIFICATE OF SERVICE**

I hereby certify that on May 31, 2006, I electronically filed the following document with the Clerk of the Court using CM/ECF which will send notification of such filing to the following:

**REDACTED DECLARATION OF JAMES STORER IN SUPPORT OF  
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT**

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I hereby certify that on May 31, 2006, I have forwarded the above-noted document to the following as noted below:

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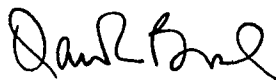
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